

## Claims

What is claimed:

1. The broad method of achieving coherence of the heart rate variability cycle during exercise by facilitating the synchronization of the varying breathing cycle with the varying heart rate variability cycle for purposes of achieving the optimal psycho-physiological state and consequent optimal physical performance and experience.
2. The broad system for achieving coherence of the heart rate variability cycle during exercise by facilitating the synchronization of the varying breathing cycle with the varying heart rate variability cycle for purposes of achieving the optimal psycho-physiological state and consequent optimal physical performance and experience.
3. The method of claim 1 wherein feedback to a human subject during exercise as to when to begin inhalation and when to begin exhalation on the basis of peak negative heart rate and peak positive heart rate, respectively, is provided.
4. The system of claim 2 wherein feedback to a human subject during exercise as to when to begin inhalation and when to begin exhalation on the basis of peak negative heart rate and peak positive heart rate, respectively, is provided.
5. The method of claim 1 wherein varying feedback as to when to inhale and when to exhale on the basis of varying heart rate variability periodicity is provided.
6. The system of claim 2 wherein varying feedback as to when to inhale and when to exhale on the basis of varying heart rate variability periodicity is provided.
7. The method of claim 1 wherein enabling and disabling feedback as to when to inhale and when to exhale on the basis of average heartbeat rate stability is provided.
8. The system of claim 2 wherein enabling and disabling feedback as to when to inhale and when to exhale on the basis of average heartbeat rate stability is provided.
9. The method of claim 1 wherein a fully variable tempo which is in keeping with the heart rate variability cycle and consequently in keeping with the

breathing for purposes of synchronizing body movement with heart rate and with breathing cycles is provided.

10. The system of claim 2 wherein a fully variable tempo which is in keeping with the heart rate variability cycle and consequently in keeping with the  
5 breathing for purposes of synchronizing body movement with heart rate and with breathing cycles is provided.

11. The method of claim 1 wherein programmability of said tempo generation such that the human subject can optimize the rate of physical motion relative to their heart rate variability and breathing cycles is provided.

10 12. The system of claim 2 wherein programmability of said tempo generation such that the human subject can optimize the rate of physical motion relative to their heart rate variability and breathing cycles is provided.

13. The method of claim 1 wherein user selection of what feedback is desired and selection of the form of said feedback including audible, visual, and  
15 tactile forms or any combination of the three is provided.

14. The system of claim 2 wherein user selection of what feedback is desired and selection of the form of said feedback including audible, visual, and tactile forms or any combination of the three is provided.

15. The system of claim 2 wherein instantiation in hardware, software, or any  
20 combination of hardware or software is provided.

16. The system of claim 2 wherein instantiation in any and all physical form factors expressly including wristwatches, cell phones, portable sports performance devices, odometers, speedometers, exercise machines, bicycles, palm top computers, lap top computers, personal computers,  
25 television sets, etc. is provided.

17. The method of claim 1 wherein the present invention is applied to any and all exercise modalities including sport and therapeutic purposes.

18. The instructive method by which a human subject is to apply the present invention for purpose of achieving coherence of heart rate variability while  
30 exercising for the purpose of achieving the optimal psycho-physiological performance and consequent experience.